Commodity Spotlight

USDA photo: Larry Rana

# Soybean & Cotton Plantings To Decline in Favor of Corn In 2002

For the eight major U.S. field crops (corn, soybeans, wheat, cotton, sorghum, barley, oats, and rice), planting intentions for the 2002 crop year are pegged at 248.3 million acres. While acreage is down more than 3 million acres from last year's intentions, it is nearly identical to last year's actual planted acreage, despite widespread weak price signals this spring. Planting intentions for 2002 are 8.6 million acres below the most recent peak in planting intentions in 1996.

Leading this year's change in crop mix is a surge in corn planting intentions. Intended corn plantings are up in part because (natural gas-based) fertilizer costs are down compared with last year. Also contributing to expanded corn planting intentions this year are changes in relative commodity prices and non-price factors, such as crop rotation considerations and disappointment with soybean yields in recent years. In all, farmers intend to expand planted corn acreage by about 4 percent from 2001, to 79 million acres. Soybean plantings are expected to be down 1.1 million acres to 73 million, and wheat plantings will continue their downward trend, with intentions 0.6 million acres off last year's 59.6 million planted acres. Intended cotton plantings, at 14.8 million acres, show a 6.3-percent decline.

Compared with last year, corn and spring wheat price expectations—based on futures contract prices—are down 5 percent and 1 percent, respectively. Winter wheat prices dropped 12 percent and cotton prices by 19 percent. In contrast, soybean prices rose 7 percent. With commodity price expectations remaining below farm program loan rates for some crops, marketing loan benefits—marketing loan gains or loan deficiency payments (LDPs)—will continue to be an important determinant of planting decisions, particularly for soybeans and cotton. Although commodity program loan rates had not been announced at the time USDA's planting intentions survey was taken in early March, many U.S. farmers are likely to have assumed that loan rates will remain unchanged for the 2002 crop year.

Trend yields, along with planting intentions, suggest a larger U.S. corn crop and a slightly smaller soybean crop than last year's. Even with slightly lower expected wheat acreage, production prospects point to a larger crop than last year due to lower projected abandonment (unharvested acres). Overall yields could also rebound from last year, in part because most of the decline in "all wheat" acreage this year is expected to be from generally lower yielding spring wheat. A smaller cotton crop is anticipated as cotton acreage is being bid away to more profitable competing crops.

**Corn**. Corn growers intend to plant 79 million acres in 2002, up more than 4 percent from last year's planted acreage but still well below the record 84.1 million acres in 1981. Many producers in the Midwest probably anticipated more attractive net returns for corn than for soybeans. This year's increase is due largely to lower per acre costs of fertilizer and fuel for corn production than last year, and a switch from cotton acres in the Delta as cotton's producer incentive prices (PIP)—market price plus benefits from LDPs and marketing loan gains—declined. Also important are crop rotation considerations, uncertainty about new farm bill provisions and the potential for lower soybean loan rates, and plantings on land that farmers intended to put in corn last year but could not plant due to adverse weather conditions.

The prospective expansion of corn plantings in the Corn Belt this year outpaces the rise in the Central and Northern Plains. Intended corn plantings in the Corn Belt are up 1.6 million acres, with the increase spread throughout the entire region. Iowa and Illinois lead the increase

***Planting intentions*** for 2002 are compared with actual plantings in 2001 unless otherwise stated. Price expectations are based on year-to-year changes in new-crop futures price quotes for harvest-time delivery in mid-March for spring crops and mid-October for winter wheat (when planting decisions are made). For wheat, futures prices are from the Kansas City Board of Trade for hard red winter wheat and the Chicago Board of Trade for soft red winter wheat. Spring crop producers may have indicated their planting intentions based on early-March futures prices. For soybean producers this year, new-crop futures prices are less relevant than the per-unit revenue floor available from marketing loan benefits.

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with 0.3 million acres each, followed by Minnesota, Indiana, Wisconsin, and Ohio. Intended corn acreage in the Central and Northern Plains region is up a total of 0.6 million acres, most notably in North Dakota, Nebraska, and South Dakota. The potential 0.3-million-acre expansion of corn plantings in North Dakota may reflect a shift from other spring wheat (spring wheat, excluding durum), which shows a decline of 0.7 million acres in that state.

Intended corn acreage is also up throughout most of the South (the Delta, Southeast, and Southern Plains regions), with Texas and Louisiana leading the increase with 0.3 million acres each. In all, intended corn plantings are up 1.1 million acres in this region. In Texas, relatively large declines in sorghum and cotton planting intentions suggest that expanded corn area may come from land previously planted to these crops. A considerable reduction in cotton acres in the Delta region reflects lower expected per-unit returns for cotton this year.

Planned adoption of biotech varieties accounts for about 32 percent of intended corn plantings this year, up from 26 percent last year. Plantings of insect-resistant (Bt) corn varieties, including stacked-gene varieties (which have both Bt and herbicide-tolerant traits), are expected to reach 24 percent of all corn acres, up from 19 percent last year.

**Soybeans.** Intended soybean plantings for 2002 total 73 million acres—1.5 percent below last year's planted acreage and a 2-percent decline from record plantings in 2000. This year's intentions, if realized, would be the second consecutive year of declining soybean acreage, a slight reversal from the continuous expansion of soybean acreage since 1990.

Crop rotation considerations favor more corn plantings at the expense of soybeans in the Midwest this year, but marketing loan benefits also play a role in farmers' planting decisions for soybeans. If not for the prospect of a continuation of relatively high marketing loan benefits for soybeans, U.S. soybean intended plantings may have declined even further. Marketing loan provisions have made soybean production attractive to many producers because the potential for marketing loan gains (repayment of government loans below the loan rate) and LDPs can provide soybeans a higher net return than competing commodities when market prices of these crops fall below commodity loan rates.

***These estimates*** are based on farmer surveys conducted by USDA's National Agricultural Statistics Service during the first 2 weeks of March. USDA's *Prospective Plantings* report for 2002, released March 28, provides this year's first (USDA survey-based) indication of farmers' spring planting intentions for major field crops. Weather or price changes could alter planting decisions. USDA will release acreage estimates in its June 30 *Acreage* report, after crops have been planted or when planting intentions are more definite. The March *Prospective Plantings* report is available at http://usda.mannlib.cornell.edu/ and the June *Acreage* report will be available at http://usda.mannlib.cornell.edu/reports/nassr/field/pcp-bba/

The decline in intended soybean plantings this year is concentrated in the Corn Belt. Soybean plantings in this region are expected to contract by 1.1 million acres, spread fairly evenly among key producing states (Iowa, Illinois, Indiana, Missouri, and Ohio). In the Central and Northern Plains, soybean plantings may remain unchanged this year.

A notable exception to this year's soybean picture is North Dakota, where soybean plantings could rise almost 0.5 million acres—more than 20 percent—reflecting the switch from other spring wheat, which is expected to yield lower net returns. However, soybean plantings are expected to decline in other wheat-dominated states in the Central and Northern Plains, a deviation from the trend towards expanded soybean production in this region.

Similarly, intended soybean plantings remain virtually unchanged from last year in the Delta and Southeast. Farmers intended to expand soybean plantings in a few states—especially Mississippi, Texas, Georgia, and Alabama—but these gains may be offset by decreases in Oklahoma, Kentucky, and North Carolina.

Although overall soybean planting intentions have decreased, herbicide-tolerant soybeans appear to have become even more popular with U.S. farmers. The expected adoption rate for biotech soybeans reached 74 percent, up from 68 percent last year.

**Other feed grains**. Among "other feed grains," sorghum planting intentions dropped 13 percent from last year's plantings to 9 million acres, whereas intended oats plantings surged 16 percent to 5.1 million acres. Intended barley plantings are up slightly, to 5.1 million acres from last year's 5 million.

Intended sorghum plantings are down in key producing states, led by a 0.8-million acre drop in Texas, the second-largest sorghum producer behind Kansas. Intended sorghum plantings are down this year in part because of the faster pace of winter wheat seedings last fall than the previous year and lower projected abandonment of winter wheat acreage—land that alternatively may have been planted to sorghum. For example, sorghum plantings in Kansas last year were up 0.5 million acres from 2000 mainly because adverse weather prevented winter wheat seedings. In fact, although this year's sorghum planting intentions in Kansas are down from last year's actual plantings, they are up 0.2 million acres from last year's intentions of 3.6 million acres. Higher yields for corn in recent years have also enticed producers to switch from sorghum to corn this year.

Among the major field crops, intended oats plantings show the largest percentage increase from last year. Intended acreage is up 16 percent, with most of the increase coming from Texas, North Dakota, Wisconsin, South Dakota, California, Kansas, and Minnesota. Oats plantings in other states are expected to be fairly steady. An expected farm price more than 50 percent above last year, reflecting a shortage of food-grade oats, enticed U.S. farmers to expand their planting intentions. Important suppliers to the U.S. market—Canada, Sweden, and Finland—experienced production problems last year. Canadian oats production was down by nearly

20 percent and the quality of oats in these countries was poor.

Intended barley plantings are up 2 percent from last year's plantings. Expected plantings remain unchanged at 1.5 million acres in North Dakota, the leading barley producer. The bulk of the increase is in Montana, as barley plantings have shifted from east to west to avoid plant diseases. Producers in some states (California and Washington) may be switching much of the cropland previously planted to barley to more profitable competing crops.

**Wheat.** Wheat area intentions for 2002 total 59 million acres, a 1-percent decline from last year's planted area, mostly reflecting decreases in durum and other spring wheat plantings. USDA's *Winter Wheat Seedings* report in January indicated that farmers had planted 41 million acres of winter wheat for harvest in 2002, down 0.1 percent from last year and the lowest since 1971. The March planting intentions survey—which updates actual winter wheat seedings—put the level of winter wheat plantings at 41.1 million acres.

The expected price of winter wheat facing producers at planting time last fall was 12 percent below a year earlier based on new-crop futures prices for harvest-time contracts. But potential marketing loan benefits anticipated by producers, particularly for soft red winter (SRW) wheat, limited the decline in the PIP. Lower anticipated PIPs for cotton also upheld winter wheat plantings in the South.

Acres seeded to winter wheat in Texas, Oklahoma, and Montana showed significant increases over last year, more than offsetting a 4-percent drop to 9.4 million acres in Kansas. Winter wheat seedings in Kansas have been declining since 1996 and are now at the lowest level since 1957, reflecting a long-term expansion of corn and soybean acreage in this wheat-dominated state. Winter wheat seedings in the Southern Plains rebounded 9 percent, mostly in Texas, from last year's lower levels. Seedings were down last year due to poor planting conditions—seeding progress was hindered by early dryness followed by excessive rainfall. Most of the 0.8-million-acre gains in Texas this year were likely originally intended for grazing and hay, not for grain.

**Planting Intentions for Major Field Crops Are Nearly Identical To Last Year's Plantings**

| Crop | 2001 Intended | 2001 Planted | 2001 Harvested | 2002 intended |
|---|---|---|---|---|
| | | *Million acres* | | |
| Corn | 76.7 | 75.8 | 68.8 | 79.0 |
| Soybeans | 76.7 | 74.1 | 73.0 | 73.0 |
| Wheat | 60.3 | 59.6 | 48.7 | 59.0 |
| Sorghum | 9.4 | 10.3 | 8.6 | 9.0 |
| Barley | 5.3 | 5.0 | 4.3 | 5.1 |
| Oats | 4.4 | 4.4 | 1.9 | 5.1 |
| Rice | 3.1 | 3.3 | 3.3 | 3.3 |
| Cotton | 15.6 | 15.8 | 13.8 | 14.8 |
| Total | 251.5 | 248.2 | 222.4 | 248.3 |

Totals may not add due to rounding.
Source: National Agricultural Statistics Service, USDA.
Economic Research Service, USDA

SRW wheat area is down 4 percent from last year and 13 percent from 2 years ago. Underlying the decline are a 4-percent reduction in the expected farm price for SRW from the previous year and wet conditions across the eastern Corn Belt last fall that hampered plantings. Acreage fell across the Corn Belt and much of the Southeast.

In 2002, U.S. farmers intend to plant about 17.9 million acres of spring wheat (durum and other spring wheat), down 3 percent from last year. Behind the slight decline are a 6-percent drop in the expected price for hard red spring wheat from last year and disease problems. In North Dakota, the leading spring wheat producing state, planting intentions for other spring wheat are down nearly 10 percent, due most likely to higher expected net returns for soybeans, corn, and other oilseeds.

Similar to the intentions for other spring wheat plantings, durum wheat showed a 2-percent decline from last year, mostly in North Dakota. One reason for the decline is the removal of incentives provided by the durum Crop Revenue Coverage program, which was cancelled last year due to administrative difficulties. In addition, concerns about scab problems—which ravaged the durum crop across a wide area last year—further dampened incentives. Most of the cropland not planted to durum wheat will likely be switched to corn, oilseeds (soybeans, flaxseed, or canola), or oats.

**Cotton**. Planting intentions for cotton in 2002 total 14.8 million acres, a decline of more than 6 percent from last year's planted acreage. With this spring's (mid-March) expected PIP for cotton—which includes expected marketing loan benefits—down by about 11 percent from a year earlier, cotton acreage is being bid away to more profitable competing crops. Cotton growers are still eligible to purchase higher coverage levels of crop insurance at the lower premium provided under the Agricultural Risk Protection Act of 2000, but the price guarantee under this program is considerably lower this year. Uncertainty about the outcome of the farm bill, especially with respect to payment limitations, may also be a factor contributing to the decline in cotton planting intentions.

The anticipated drop in total cotton area in 2002 is unevenly distributed among the leading cotton-producing states. In Texas, cotton plantings are down about 0.3 million acres (a decline of 5 percent). Cotton plantings in the Delta region (Mississippi, Louisiana, and Arkansas) are down 0.5 million acres, a decline of 15 percent. In California, farmers intend to plant nearly the same amount of cotton as in 2001.

Cotton growers intend to plant 71 percent of upland cotton acres to biotech varieties, up from 69 percent last year. The intended adoption rate of herbicide-tolerant cotton, including stacked-gene varieties, is 59 percent of cotton acreage, up from 56 percent last year. In contrast, Bt cotton (also including stacked-gene varieties) is

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expected to be down, accounting for 35 percent of cotton acreage compared to 37 percent last year.

**Rice**. U.S. rice growers indicated plantings of about 3.3 million acres in 2002, virtually unchanged from a year earlier but almost 2 percent above the 1997-2001 average. Total returns to rice production, including marketing loan benefits, were estimated higher than returns from alternative planting options—primarily soybeans in the South—for most producers despite expectations of large carryover stocks this year and the lowest prices in 15 years.

This year, producers indicated long grain rice plantings of almost 2.7 million acres, less than 1 percent below last year's near-record. Nearly all long grain rice is grown in the South. Plantings of long grain rice are expected up in Arkansas, but down in Texas and Louisiana.

Combined medium/short grain planting intentions are up 2 percent, with California accounting for all of the expansion. Medium grain prices have strengthened since the start of the 2001/02 market year and have remained well above long grain prices, a result of a sizeable decline in the crop in California, where the bulk of U.S. medium grain is grown. In contrast, U.S. long grain prices have declined sharply since last summer.

Producers in the Mississippi Delta region indicated slightly higher rice acreage in 2002, with record plantings likely for Arkansas and Missouri. The Delta is the largest U.S. rice-growing region and has the lowest per-unit production costs. In contrast, producers in Texas and Louisiana indicated smaller rice plantings, with Texas reporting the fewest acres since 1936. The Gulf Coast, which consists of Texas and Southwest Louisiana, reports the highest per-unit production costs among U.S. rice growing regions.

**Minor oilseeds.** Peanut and sunflower planting intentions are down 5 percent and 4 percent, respectively. Sunflower plantings are expected to make way for higher-net-return corn, and perhaps canola. U.S. farmers intend to plant a near record 1.5 million acres of canola, up 4 percent from last year and nearly 45 percent from 1999, reflecting higher per-unit returns and fewer disease problems than sunflower production.

**Hay**. U.S. farmers intend to expand the area harvested for hay crops this year by about 200,000 acres, or 0.4 percent above last year. Texas indicates the largest increase in area harvested for hay crops, which are important feedstuffs for beef cattle and dairy operations. Hay prices are expected to remain strong (around $90 per ton) this spring, providing ranchers with the incentive to expand hay acreage. However, lower dairy cow numbers and anticipated decreases in beef production might temper the expansion of harvested hay acreage this year. AO

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# With Corn Prices Falling, Why Are Planting Intentions Up?

U.S. farmers are planning to expand corn plantings in 2002 to 79 million acres, despite expected farm prices for corn that are lower than last year's. This represents an increase of about 4 percent from last year's actual planted acreage and a 2-percent rise from 2001 planting intentions. What explains the surge of corn plantings?

Based on the settlement price of new-crop December futures for corn in mid-March 2002, the expected farm price for corn of $2.07 per bushel is about 5 percent lower than last year. Analysis by USDA's Economic Research Service (ERS) indicates that, by itself, this price decline would lower corn plantings by 1.14 million acres from last year's level.

However, compared with competing crops (particularly cotton), the expected farm price for corn looks relatively attractive this year. The reductions in expected producer incentive prices (PIP)—market price plus either loan deficiency payments (LDPs) or marketing loan gains—were greater for some other crops than for corn. The PIP for cotton fell 11 percent from last year because of lower anticipated domestic prices (based on new-crop futures contract prices) and a narrower gap between the loan rate and expected world prices (which reduces LDPs to producers).

ERS research indicates that a 1-percent decrease in the expected cotton farm price would translate into a 0.072-percent rise in corn plantings. So, with an 11-percent decrease in cotton's per-unit returns, about 0.6 million acres of cotton cropland would be switched to corn. Of the major competing crops, the expected change in the PIP for cotton appears to have the most significant effect on this year's corn plantings. Altogether, about 0.9 million acres of cropland planted last year to competing crops (cotton, wheat, and sorghum) are bid away by corn this year due to relative changes in PIPs.

Also leading to the prospective expansion of corn plantings—particularly vis-à-vis soybean plantings—is a decline in the energy component of input costs this year. Last year's overall increase in energy prices prompted farmers to switch some corn cropland to soybeans because corn production uses significantly more (natural gas-based) nitrogen fertilizer relative to soybeans, and corn production became disproportionately more costly. ERS research indicates that last year's higher per-acre fertilizer and fuel cost in corn production was equivalent to a 4.59-percent decrease in the expected corn farm price. This resulted in an increase in the soybean-to-corn price ratio from 2.53 in 2000 to 2.62 last year (after adjusting for marketing loan benefits). The price effect attributed to the higher fertilizer and fuel costs increased last year's soybean plantings by 0.67 percent, or a switch of 500,000 acres of cropland from corn to soybeans.

But lower energy prices early this year appeared to dim the production cost advantage for soybeans. Factoring in reduced fertilizer costs and assuming unchanged loan rates, the expected soybean-to-corn price ratio at active planting decision times (around mid-March) decreased from 2.62-to-1 last year to 2.57-to-1 this year. The decline in the ratio suggests that corn could be more profitable than soybeans when compared with last year. It is likely that the 0.5 million acres of cropland that was switched to soybeans last year will return to corn production. In Iowa and Illinois, for example, most of each state's 0.3-million-acre increase in intended corn plantings probably indicate a switch from soybeans to corn—a pattern that is widespread throughout the Corn Belt region.

Changing the crop rotation system away from the traditional soybean-corn rotation and toward a soybean-corn-corn rotation has also likely contributed to the expansion of corn plantings. Many farmers felt that a soybean-corn rotation was not effective enough to control insect pests in soybean production, and that a soybean-corn-corn rotation might break the pest cycle more effectively. Disappointing soybean yields experienced by many farmers in recent years, coupled with higher corn yields, may have fueled the modification in the crop rotation system this year.

Uncertainty about the farm bill might also have motivated farmers to expand corn plantings. Although many producers expect that crop loan rates will remain intact, others remain wary of changes in loan rates (especially for soybeans) that might emerge from a new farm bill, which could apply to the 2002 crops. Preconference versions of both the House (H.R. 2646) and Senate (S. 1731) farm bill proposed a lower loan rate for soybeans than the current maximum, whereas the corn loan rate would remain unchanged or be higher under these proposals. AO

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As of this writing, House and Senate farm bill conferees were still working out the language of the legislation.